

AMENDMENTS TO THE CLAIMS

Claims 1-29 (Cancelled)

30. (Currently Amended) ~~The semiconductor resistor of claim 27 wherein A semiconductor resistor formed in a semiconductor material of a first conductivity type, the resistor comprising:~~

a continuous doped region of a second conductivity type formed in the semiconductor material, the doped region having a first region and a spaced-apart second region, different potentials being placed on the first and second regions of the continuous doped region to cause a current to flow between the first region and the second region, the doped region having a length and a width, the doped region includes including a third region of a first dopant concentration, a fourth region of a second dopant concentration, and a fifth region of a third dopant concentration, the first dopant concentration being substantially larger than the second and third dopant concentrations, the fourth and fifth regions lying on opposite sides of and contacting the third region;

a layer of insulation that contacts the semiconductor material;
a first semiconductor structure that contacts the layer of insulation; and
a second semiconductor structure that contacts the layer of insulation, a spacing between the first and second semiconductor structures being substantially equal to a dimension of the doped region.

31. (Currently Amended) ~~The semiconductor resistor of claim 26 30 and further comprising a non-conductive region lying between the first and second semiconductor structures, and over the doped region.~~

32. (Previously Presented) The semiconductor resistor of claim 31 and further comprising a contact structure extending through the non-conductive region that makes an electrical connection to the first region of the doped region.

33. (Previously Presented) The semiconductor resistor of claim 32 wherein the contact structure includes a resistance-lowering layer, and a contact that is connected to the resistance-lowering layer.

34. (Previously Presented) The semiconductor resistor of claim 33 wherein the resistance-lowering layer contacts the first region of the doped region and extends continuously to the second region of the doped region.

35. (Previously Presented) The semiconductor resistor of claim 34 wherein the resistance-lowering layer includes a layer of salicide.

36. (Currently Amended) The semiconductor resistor of claim 26 30 wherein the first and second semiconductor structures are spaced apart from each other.

37. (Previously Presented) The semiconductor resistor of claim 36 wherein the first semiconductor structure includes polysilicon.

38. (Currently Amended) The semiconductor resistor of claim 26 30 wherein the first and second semiconductor structures contact each other.

39. (Previously Presented) The semiconductor resistor of claim 38 wherein the first semiconductor structure includes polysilicon.

40. (Currently Amended) The semiconductor resistor of claim 26 30 and further comprising an isolation region formed in the semiconductor material to surround an active region and isolate the active region from laterally adjacent regions, the doped region being formed in the active region and contacting the isolation region.

41. (Previously Presented) The semiconductor resistor of claim 40 wherein the first and second semiconductor structures contact the isolation region.

42. (Previously Presented) The semiconductor resistor of claim 40 and further comprising:

a non-conductive region lying over the first and second semiconductor structures; and

a contact structure extending through the non-conductive region to make an electrical connection to the first semiconductor structure.

43. (New) A semiconductor resistor formed in a semiconductor material of a first conductivity type, the resistor comprising:

a first doped region of a first dopant concentration and a second conductivity type formed in the semiconductor material to extend from a first region to a spaced-apart second region;

a second doped region of a second dopant concentration and the second conductivity type formed in the semiconductor material to extend along and contact the first doped region;

a third doped region of a third dopant concentration and the second conductivity type formed in the semiconductor material to extend along and contact the first doped region, the first doped region lying between the second and third doped regions, the first dopant concentration being substantially larger than the second and third dopant concentrations;

a layer of insulation that contacts the semiconductor material;

a first semiconductor structure that contacts the layer of insulation; and

a second semiconductor structure that contacts the layer of insulation, a spacing between the first and second semiconductor structures lying over the first doped region.

44. (New) The semiconductor resistor of claim 43 wherein different potentials are placed on the first and second regions of the first doped region to cause a current to flow between the first region and the second region.

45. (New) The semiconductor resistor of claim 44 and further comprising a non-conductive region lying between the first and second semiconductor structures, and over the first doped region.

46. (New) The semiconductor resistor of claim 45 and further comprising a contact structure extending through the non-conductive region that makes an electrical connection to the first region of the first doped region.

47. (New) The semiconductor resistor of claim 43 wherein the first semiconductor structure includes polysilicon.